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SYLLABUS AND NOTE BOOK
OF LECTURES ON
OBSTETRICS
FOR NURSES

BY

PHILIP F. WILLIAMS, M.D.

Obstetrician to the Maternity Hospital, Philadelphia

PHILADELPHIA AND LONDON
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A SYLLABUS AND NOTE BOOK OF LECTURES ON OBSTETRICS FOR NURSES

BASED ON

“THE STANDARD CURRICULUM FOR
NURSING EDUCATION”

AND

FOOTE'S “STATE BOARD QUESTIONS
AND ANSWERS FOR NURSES”
(2nd Edition)

AND COMPILED FROM

COOKE'S “HANDBOOK OF OBSTETRICS
FOR NURSES”
(10th Edition)

BY

PHILIP F. WILLIAMS, M.D.

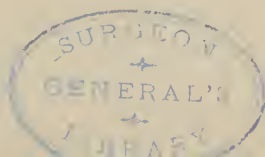
Obstetrician to the Maternity Hospital, Philadelphia

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LECTURE 1

ANATOMY.

Chapters 2 and 3, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 28-42).

The PELVIS is that portion of the skeleton which lies between the spinal column and the lower extremities. (page 28).

The COMPONENT PARTS of the pelvis are :

the SACRUM

the COCCYX, and the

two INNOMINATE BONES each of which is divided into three

parts— $\left\{ \begin{array}{l} \text{ILIUM} \\ \text{ISCHIUM} \\ \text{PUBIS} \end{array} \right.$

The ILIUM, which is the largest portion of the bone, is broad, thin, concave on its inner aspect, and lies above the narrow constricted portion of the pelvis. Joined to the sacrum behind, its upper flaring border forms the prominence of the hip or "crest of the ilium." (page 28).

The ISCHIUM, which lies below the ilium, is of obstetric importance from the occasional bony projections which may at times be of sufficient size to obstruct the descent of the foetal head. (page 29).

The PUBIS, by joining its fellow in the front median line, closes anteriorly the cavity of the pelvis. The joint is called the symphysis pubis. (page 29).

The SACRUM, is a triangular wedge-shaped bone, composed of five welded vertebra, lying at the back of the pelvis to which are joined the two iliac bones. The upper surface supports the spinal column. (page 29).

The COCCYX, is a small triangular bone attached to the apex of the sacrum. (page 29).

REGARDED AS A WHOLE the pelvis may be compared to a basin or funnel, resting on the femurs and supporting the spinal column. As this basin or funnel has no bottom the flaring iliac bones act as a funnel or guide to the bony canal through which the child has to pass at the time of labor. The BRIM or INLET is the most constricted part of the pelvis and is of obstetric importance for this reason. Any child that can pass safely through the brim can usually be delivered without any further difficulty. (page 29).

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The BOUNDARIES of the brim are the promontory or upper part of the anterior surface of the sacrum, the lower borders of the iliac bones, and the posterior surfaces of the pubic bones. (page 29).

The CONTOUR of the brim is more or less heart shaped because of the jutting forward of the promontory of the sacrum. The most important measurement is the line between the promontory and the symphysis. This is called the conjugate diameter of the inlet. (page 30).

The ARTICULATIONS OR JOINTS of the pelvis which are of importance are four in number: The two sacro-iliac articulations, posteriorly, the symphysis pubis or articulation between the pubic bones, anteriorly, and the joint between the sacrum and coccyx. These joints loosen slightly during pregnancy and relax somewhat during labor. The pelvis is lined with muscles and other tissues which are called the soft parts of the pelvis. (page 30).

COMPARISON OF MALE AND FEMALE PELVIS.

The female pelvis is shallow, lighter in structure and smoother than the male pelvis, which is deep, conical, rougher for muscular attachment, and more compact. (page 31).

PELVIC MEASUREMENTS.

The external pelvic measurements are taken with an instrument called a pelvimeter. (page 32). The important measurements are:

1. The INTERCRESTAL; the distance between the two crests at the widest point.
2. The INTERSPINOUS; the distance between the two anterior superior spines of the iliac bones.
3. The EXTERNAL CONJUGATE; the distance between the depression below the last lumbar vertebra and the anterior surface of the symphysis.
4. The EXTERNAL OBLIQUE diameters; measured from the posterior superior iliac spines to the anterior superior spines of the opposite sides.
5. The INTERNAL CONJUGATE diameter; the distance between the promontory of the sacrum and the posterior surface of the symphysis.
6. The TRUE CONJUGATE diameter is obtained by subtracting an arbitrary figure from the internal conjugate diameter.
7. The Transverse Diameter of the Outlet; the distance between the two tuberosities of the ischium.
8. The Height of the Pelvis; the distance from the tuberosity of the ischium to the crest of the iliac bone of the same side.

The IMPORTANCE of these measurements is shown in pelvises which are contracted, as a fore-knowledge of the size of the pelvis enables the obstetrician to tell whether the child will be born normally, or whether an operation as a Cesarean section will be necessary. (page 33).

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EXTERNAL GENITALIA. (page 34)

The EXTERNAL GENITAL organs grouped as a whole are called the VULVA. (page 34).

The MONS VENERIS is a firm cushion-like formation lying directly over the symphysis pubis. (page 34).

The LABIA MAJORA are two fatty folds of skin which cover the labia minora and the opening of the vagina. (page 34).

The LABIA MINORA are two thin folds of mucous membrane which lie entirely within the vulva and form a hood for the clitoris. (page 35).

The CLITORIS is a small reddish tubercle situated about a half inch behind the upper junction of the labia. (page 35).

The MEATUS URINARIS is the external opening of the urethra. (page 35).

The VAGINA is a musculo-membranous canal, 5 to 6 inches in length, leading from the vulva to the uterus and lying within the pelvis. Its secretion acts as a natural lubricant. The collapsed mucous lined walls of the vagina take the form of the letter H. (page 35).

INTERNAL ORGANS OF GENERATION. (page 35)

The UTERUS is a hollow, pear-shaped organ about three inches long in the non-pregnant state. The walls are composed of involuntary muscle fibres arranged in whorls and it is lined with a specialized type of glandular secreting cells, called the endometrium. It is covered almost wholly by the peritoneum. (pages 35-36).

The LIGAMENTS which support the uterus and maintain its position in the pelvis are two broad ligaments running from the uterus to the side walls of the pelvis, composed of folds of peritoneum, carrying blood vessels, and supporting at the top the Fallopian tubes; the round ligaments which run from the fundus or top of the uterus to the anterior abdominal wall; the uterosacral ligaments which run from the cervical portion of the uterus to the posterior wall of the pelvis. (page 36).

The FUNDUS is the upper part of the uterus, which expands and enlarges during pregnancy. It comprises two-thirds of the uterus in the non-pregnant state. (page 38).

The CERVIX is the neck of the uterus. It is the lower narrow third which projects into the vagina, like a cork into a bottle. (page 38).

The FORNICES are the spaces between the projecting cervix and the vaginal walls. The posterior space or fornix is much deeper than the anterior on account of the position of the uterus in its relation to the axis of the vagina. (page 38).

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The cavity of the uterus is divided into two parts, the cavity of the **FUNDUS**, which is triangular in shape, with the apex pointing downward, and the cavity of the **CERVIX**, which is spindle shaped. (pages 38-39).

The three **OPENINGS OF THE UTERUS** are the two at the upper outer angles of the body or fundus where the tubes enter the uterus, and the lower end of the cervix which is called the os; the upper end of the cervical canal is spoken of as the internal os. (page 39).

The **FALLOPIAN TUBES** are two tubes running outward from the uterus for four or five inches to a trumpet-shaped ending, called the fimbriated extremity, from its fringe-like terminations. (page 39).

The **OVARIES** are two almond shaped organs attached to the posterior surfaces of the broad ligaments between the uterus and the ends of the Fallopian tubes. In them are the original germ cells, which mature about the time of each menstrual period, and if not impregnated by a male element, the usual phenomena of menstruation occur. (page 39).

The **PERINEUM** is the mass of fibrous and muscular tissue lying between the vagina and the anus. It is formed by the junction of the muscles of the pelvic floor and the fascia around them. When the perineum is overstretched during labor varying degrees of laceration result. (pages 39-40).

The **BREASTS** are two highly developed glands on the upper anterior surfaces of the chest. They are made up of lobes or collections of glandular and fatty tissue. The ducts from the different lobes empty in a conical projection at the centre of the breast, called the **NIPPLE**. Around the nipple is an area of darker skin called the **AREOLA**, which becomes much darker during pregnancy. After labor certain stimuli reaching the breasts cause them to secrete milk. During pregnancy the congestion of the breasts is accompanied by the secretion of a clear fluid called **COLOSTRUM**. (pages 40-41-42).

Quiz questions for this lecture will be found in *Foote's "State Board Questions and Answers for Nurses,"* J. B. Lippincott Company, Philadelphia and London, 1920, pages 277-278-279-292.

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LECTURE 2

PHYSIOLOGY OF REPRODUCTION.

Chapters 4 and 5, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 43-66).

DEVELOPMENT OF GRAAFIAN FOLLICLE.

At birth the ovary contains about 70,000 ova or germ cells, entirely undeveloped. About the age of 13 and once a month one of these germ cells enlarges and approaches the surface of the ovary. This enlarged ovum lying beneath the surface of the ovary is called the Graafian follicle. It ruptures at a thin place on its wall and the ripened ovum escapes. (page 43).

OVULATION.

The process by which the ovum ripens and escapes is called OVULATION. It is usually accompanied by menstruation except during lactation. Ovulation can take place without menstruation. (page 44).

PUBERTY in females is the time of life at which menstruation is first established. It usually occurs about 13 years of age. (page 45).

ADOLESCENCE is the period between puberty and maturity, when the physical characters of womanhood are being established. (page 45).

MENSTRUATION is the name given to the periodic discharge of a bloody fluid from the uterus. It occurs normally at regular intervals of 28 to 30 days except during pregnancy and lactation. Some women have a normal 21 day period. The flow lasts as a rule from 3 to 5 days and the amount is gauged by the number of napkins necessary. It is accompanied in most cases by a feeling of fullness in the pelvis, slight headache and some tingling in the breast. (pages 45-46).

AMENORRHEA is a term signifying absence of menstruation.

MENOPAUSE or change of life occurs at about 45 years of age. It signifies the end of the active reproductive life of the individual. It is often characterized by the menses becoming scant and irregular before ceasing. (page 47).

IMPREGNATION of the ovum or fertilization is the meeting and entrance of a male element into ovum; this usually takes place in the Fallopian tube. (page 48).

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SEGMENTATION OF OVUM. After fertilization of the ovum by the spermatozoon, the ovum begins to develop by dividing many times so that each cell possesses half male and half female matter. This continues to the development of the fetus and its coverings. While the process is going on the ovum passes from the Fallopian tube to the uterus. (page 49).

DECIDUA. In preparation for the fertilized ovum the mucous membrane of the uterus has changed into a spongy layer which is called the decidua. If the ovum has not been fertilized this developed membrane is cast off in the menstrual flow. (pages 49-51).

But if pregnancy has begun this spongy layer of tissue forms a place for the ovum to rest as it comes from the tube to the uterus. The decidua, while one membrane at first, is spoken of as three kinds.

The DECIDUA SEROTINA upon which the ovum rests after it lodges in the uterus, and which later helps to form the placenta. (page 50).

The DECIDUA REFLEXA, which folds over the ovum enclosing it in a capsule, as it were, and (page 50).

The DECIDUA VERA, which lines the remainder of the uterine cavity. (page 50).

The CHORION, which is the middle layer of the amniotic sac, has for its special purpose the burrowing into the walls of the uterus by means of small projections to furnish the food supply of the ovum, until the formation of the placenta. (pages 52-53).

The PLACENTA is formed by the decidua serotina and the chorion which covers the decidua serotina. At term the placenta is a fleshy mass about seven inches in diameter, an inch or so thick, round in shape and weighing about a pound. It is smooth on the foetal side, being covered with amnion and rough on the maternal side, the rough projections in clumps being called cotyledons; to it is attached the umbilical cord. (page 53).

The AMNION is formed by the blending of the decidua and the chorion around the ovum, it is soon a clear membrane which secretes the fluid in which the fetus lives. The amniotic sac protects the fetus from injury, allows it freedom of motion, and at the time of labor acts as a hydrostatic dilator for the cervix. (page 52).

The LIQUOR AMNII which fills the sac is a clear straw colored fluid in which the fetus floats. (page 51).

The UMBILICAL CORD attaches the fetus to the placenta, and carries the blood which gives the fetus its oxygen and nourishment. The placenta and umbilical cord form at about the fourth month. The cord at term is about

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20 inches long. It is composed of two arteries and a vein, twisted upon each other and protected by a soft gelatinous substance called the Jelly of Wharton. (pages 53-54).

OVUM AT 4 WEEKS. At the end of four weeks the ovum is merely a small spongy looking sphere containing a small curved gelatinous mass, with no evidence of head or extremities, and if abortion occurs at this time is usually lost in the discharge of blood. (page 55).

OVUM AT THIRD MONTH. At the end of the third month the ovum is about four inches in length and weighs about three and a half ounces. The now developed head occupies a third of the entire fetus. The neck and extremities are formed and sex can be told. The skin is a pale rose color, very delicate. The placenta is just formed. (page 55).

OVUM AT SIXTH MONTH. The fetus is now about 12 inches long and weighs about a pound. Faint evidences of the eyelashes and eye brows have appeared and the skin is darker and firmer. (pages 55-58).

OVUM AT SEVENTH MONTH. Development is very rapid during the seventh month. The fetus is 15 inches long and weighs 3 to 4 pounds. The eyelids can be opened and the skin is much firmer, lighter, and is covered with a cheesy, greasy material called vernix caseosa. This is the earliest time at which a child can be born with any prospects of living. The term VIABILITY refers to the possibility of the child living. (page 58).

OVUM AT TERM. The fetus at term is from 18 to 22 inches long, weighs 6 to 7 pounds, and is ready to assume the functions of respiration, digestion and excretion. (page 58).

The HEAD of the fetus is still the largest part of its body, although it has not increased in size proportionately with the other parts during the latter part of the pregnancy. It is divided into two parts, cranium and face. (page 58).

The SUTURES are the membranous intervals separating the different bones of the cranium, and permit overlapping of the bones during delivery. (page 58).

The FONTANELLES are the intersections of the sutures and from the position of the various fontanelles the position of the head during labor is determined. The moulding of the baby's head is due to the squeezing of the bones and their overlapping during labor. (page 60).

FOETAL CIRCULATION. The fetus receives its food and oxygen from the mother by means of the placenta and cord and by them returns its waste products for excretion. The cord has two arteries and one vein. The fresh blood comes to the child through the vein and the returning blood is carried by the arteries. The difference in the foetal circulation and that after birth may be understood

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when we realize that the lungs and digestive tract of the fetus do not function and there is no need for the pulmonary circulation nor for so great a blood supply to the intestinal canal. So there are certain structures in the foetal circulation which act as switches to keep the blood from certain parts of the body and which immediately after birth are of no further service and are at once abandoned. The most important of these is the foramen ovale, which permits the blood to pass from the right auricle to the left auricle, thus keeping it from the lungs, but immediately after birth, as the infant must oxygenate its own blood, this valve must be kept closed by nature and by keeping the infant on its right side to favor the closure of the valve. The others are the ductus arteriosus, connecting the aorta and the pulmonary artery; the ductus venosus, connecting the umbilical vein, and the ascending vena cava; and the two hypogastric arteries; springing from the internal iliacs and passing out of the abdomen through the navel, into the cord where they become the umbilical arteries. (pages 60-64).

This course of the foetal blood and of the infant immediately after birth, in contrast to the foetal circulation, can be best seen in the charts, pages 62 and 63, *Cooke's "Handbook of Obstetrics."*

MULTIPLE GESTATION. When as occasionally happens, two or more embryos develop in the uterus at the same time the condition is known as multiple gestation. Twins are encountered once in 90 cases, triplets once in 8,000. (page 65).

TWINS are due to the fertilization of two separate ova, either from the same or from different Graafian follicles but they may result from the double impregnation of a single ovum by two spermatozoa or from the complete fusion of a single germ. (page 65).

The most frequent combination of sex is a boy and a girl, next is two boys, and least common is two girls.

TRIPLETS, ETC. Triplets come from the double impregnation or complete fusion of one ovum and the simultaneous fertilization of another single ovum, while quadruplets may be regarded as double twins. (page 66).

In the case of multiple births the umbilical cord must always be cut between ligatures to prevent the second child from bleeding to death.

Children born of multiple pregnancies are usually more frail than in single births and more care must be exercised in their early infancy. (page 66).

Quiz questions for this lecture will be found in *Foot's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 277, 279, 280, 288, 291, 292, 294, 305 and 312.

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LECTURE 3

PHYSIOLOGIC PREGNANCY.

Chapter 6, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 67-74).

LOCAL CHANGES.

The UTERUS increases in size to make room for the growing fetus. It becomes more vascular and thickened, later thinning out, the mucous membrane becomes the decidua of pregnancy. The uterus rises out of the pelvis at four months. (page 67).

The ABDOMEN distends to accomodate the enlarging uterus. The stretching of the skin causes red or blue streaks which are called the "linea albicantes or stria gravidarum," and are due to the stretching rupture and atrophy of the deeper layers of the skin. (page 67).

The PELVIS does not change except for a slight increase in the mobility of the various joints.

The VAGINA becomes thickened, as to its wall, the secretion is greatly increased, and due to the increased vascularity the walls are of a dark blue color which in contrast to the usual pink color of the non pregnant state is a diagnostic sign of pregnancy. (page 69).

The BREASTS change to prepare for the work of secreting milk. They become larger and firmer, and the nipples become more prominent and sensitive. The pinkish areola about the nipple becomes darker in color to a brownish or almost black. The small sebaceous glands about the nipple become enlarged to little elevations called the "tubercles of Montgomery." (page 69).

The distension of the breasts cause similar stria on the skin as are seen on the abdominal wall. After the third month the breasts contain a thin white fluid called the colostrum. Milk is not secreted until after the baby has been born.

The BLOOD increases in amount and in its fluid constituents but the red cells are not proportionately increased. This causes extra work on the heart and may also cause a slight swelling of the ankles, not to be confused with the swelling of the kidney disorders. (page 70).

The LUNGS are subject to pressure in the later months of pregnancy from the growing uterus and the patient may suffer from cough and dyspnea. (page 70).

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The DIGESTIVE TRACT is subject to increased demands to provide for the mother and child, and nausea and vomiting are a sign of early pregnancy while gastric symptoms and constipation are the rule in the later months from the pressure of the growing uterus. (page 70).

The NERVOUS SYSTEM of a pregnant woman is easily subjected to any disturbing influence.

The URINE of a pregnant woman is increased in amount and is usually of a low specific gravity. Irritability of the bladder is frequent in early and late pregnancy from pressure. Traces of albumin are often found which are of no moment, but it may be progressive and due to serious kidney changes and this necessitates a careful examination of the urine at stated intervals through the whole pregnancy. (page 73).

SIGNS AND SYMPTOMS OF PREGNANCY.

Chapter 10, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 84-90).

PRESUMPTIVE SIGNS.

MENSTRUAL SUPPRESSION—AMENORRHEA. Amenorrhea or cessation of menstruation due to impregnation is usually the first symptom noticed by the patient. (page 85).

IRRITABILITY OF THE BLADDER, occurs after three or four weeks and continues for about six weeks and is due to the sinking and pressure of the recently impregnated uterus. (page 85).

NAUSEA AND VOMITING, occurs after about six weeks and usually continues for about six or eight weeks and is supposed to be due to the effect of the reaction of the woman to the pregnancy. (page 86).

MENTAL SYMPTOMS. Mental symptoms may be various and range from altered appetite to marked changes in the mental condition of the patient. (page 86).

PROBABLE SIGNS.

MAMMARY CHANGES include enlargement, slight pains, sense of fullness, darkening of the areola and erectile nipples, later on the secretion of colostrum. Breast changes are not so marked in repeated pregnancies. (page 87).

PHYSICAL SIGNS ON EXAMINATION.

ABDOMINAL CHANGES. No abdominal changes are seen during the first three months. Pigmentation of the median line "linea Nigra" occurs about five months. The uterus may be felt in the abdomen as early as the fourth month. (page 88).

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The VAGINAL MUCOSA becomes thicker, blue in color. The secretion may be noticed to be increased. (page 89).

The UTERINE MURMUR due to the increased vascularity may at times be found.

INTERMITTENT UTERUS CONTRACTIONS of a rhythmical nature may often be noticed on prolonged inspection of the abdomen during pregnancy.

POSITIVE SIGNS.

PASSIVE FOETAL MOVEMENTS may be elicited by the physician on examination, as the head when pushed up quickly by a finger in the vagina will quickly drop back; this is called "ballottement." (page 89).

ACTIVE FOETAL MOVEMENTS may be seen and felt after the fifth month by placing a hand on the abdomen. The first sensation of the mother of these movements is called "feeling life," and is usually first noticed about the 22nd week of pregnancy. (page 90).

THE FOETAL HEART SOUNDS may be heard about the fifth month, and are compared to the ticking of a watch under a pillow; the rate is about 150 per minute, but varies. (page 90).

MANAGEMENT OF PREGNANCY.

Chapter II, *Cooke's "Handbook of Obstetrics."* (pages 99-117).

The CLOTHING of a pregnant woman should be governed by common sense. It should not in any way interfere with the free development of the fetus. (page 99).

SUPPORTS are a great help to many pregnant women. Various types of maternity corsets and belts are sold. A comfortable front lacing corset will usually supply the necessary support. (pages 99-100).

SHOES with low heels will relieve much of the leg strain and backache felt by many women during pregnancy. (page 102).

EXERCISE is necessary during pregnancy, it should be limited and never be carried to the point of fatigue. Walking is the best form of exercise. (pages 102-103).

BATHING assists in the elimination of the waste products, mild tepid baths just before retiring are preferable. Shower baths are preferable to tub baths in preventing any entrance of water into the vagina. (pages 104-105).

SLEEP in greater amount than usual is required and in addition a daily sleep of an hour or two will be found beneficial. (page 105).

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The TEETH of a pregnant woman have a tendency to softening due to the increase of saliva and to the abstraction of calicum salts by the growing fetus. During pregnancy rigid mouth hygiene is necessary. Dental work should be limited, but performed when necessary. (page 105).

The DIET of a pregnant woman should be a simple ordinary mixed diet. No extra strain should be thrown on the organs of elimination. Meat should be allowed but once a day. An increased amount of water is necessary. (pages 106-107).

BOWELS. Constipation is the rule in pregnancy. It may be overcome by fruit, etc., in the diet, or by the use of mild laxatives. Drastic purgatives should be avoided. (pages 108-109).

BLOOD PRESSURE. Estimations are as necessary as urine examinations in the prevention of toxemias and should be made at regular and frequent intervals.

KIDNEYS. No organ requires more watching than the kidney. The amount of urine passed should be measured at regular intervals, it should never be allowed to drop below two pints a day. The examinations of the urine will detect any changes in the functional ability of the kidney to excrete the waste products of the mother and fetus. The patient should be instructed to report promptly any symptom of kidney insufficiency. (pages 109-110).

BREASTS. The breasts need no especial care beyond careful bathing unless there is a lack of development of the nipples, when a little massage late in pregnancy will assist in developing them. (pages 110-111).

NERVOUS CONDITION. Any anxieties of a pregnant woman should be avoided. She should be protected from irritating or worrying conditions and circumstances. (pages 111-113).

Quiz questions for this lecture will be found in *Foote's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 293, 294, 295.

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LECTURE 4

PATHOLOGY OF PREGNANCY.

Chapter 16, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 183-213).

NAUSEA AND VOMITING, are present in almost all pregnancies to a greater or less degree, and may be considered if mild as a physiological process. The mild form is termed the (page 183).

REFLEX TYPE and is, as a rule, amenable to treatment. This should consist of breakfast in bed, coffee or tea and toast as examples of the proper diet for this meal, and the milder sedatives as sodium bromid. The condition appears after the first month and usually disappears in a few weeks. But at times the vomiting becomes more pronounced, occurs during the entire day and causes marked prostration and weakness, resisting all forms of treatment and this degree of vomiting is termed the (page 183).

PERNICIOUS TYPE. Under such circumstances the patient is kept in bed, and feeding may at times be administered by the rectal tube. Various enemas may be used. A solution of glucose will more easily supply the necessary heat units needed. Many remedies have been used in this condition, among them the various ovarian substances, reasoning that a deficiency of the internal secretion of the corpus luteum is responsible for the condition. Should all treatment fail and the patient's condition becomes serious the induction of abortion may be rendered advisable. (pages 184-185-186-187).

CONSTIPATION, which is common during pregnancy is due largely to the impaired peristaltic motion of the intestine caused by pressure from the gravid uterus. The dangers of persistent constipation during pregnancy are evident. The condition should be overcome by altering the diet, exercise and by such drugs as cascara, mineral oil, or mild aperient waters. (page 187).

DIARRHEA occurs occasionally during pregnancy and if allowed to persist may result in miscarriage. Castor oil should not be given to a pregnant woman, but the bowel should be cleared by saline enemas and bismuth given to check the diarrhea. (page 188).

VARICOSE VEINS in pregnancy are seen in the legs and on the vulva and may even extend into the pelvis itself. The swelling and enlargement is due to the weakness of the walls of the veins and is accentuated by the pressure from the gravid uterus. The condition gives rise to a dull aching pain and is recognized on examination. Elastic bandages or stockings and resting in

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the recumbent posture will give some relief. Thromboses should be guarded against during the puerperium. (pages 189-190-191).

EDEMA, if not from kidney or heart disease is due to pressure on the blood vessels and may be relieved by rest and proper corseting. Edema developing in a pregnant woman should occasion an immediate urine examination. (page 191).

CARDIAC CONDITIONS are often greatly aggravated by pregnancy and labor. Rest and careful attention to all the rules of the hygiene of pregnancy will often carry a woman to term when either an early forceps delivery or a Cesarean section will relieve the weakened heart muscle. Severe cases of heart disease with poor compensation may be indication for therapeutic abortion or premature labor. (page 192).

LEUCORRHEA occurs frequently during pregnancy and is due at times to an increase in the vaginal secretion; at other times to increase from congestion of an old cervical disease. Local treatment, preferably mild douches, should be used with care to prevent abortion or miscarriage. (page 194).

ECLAMPSIA is a disease of pregnancy characterized by the occurrence of convulsions resembling somewhat those of epilepsy, and appearing, usually, late in pregnancy just at the onset of labor. (pages 196-197).

The cause of eclampsia is unknown, but is believed to depend upon the deficient elimination of waste products. Its threatened onset is indicated by the appearance of albumin in the urine and a rising blood pressure. (page 197).

The PREMONITORY SYMPTOMS are albumin in the urine, headache, nausea, pain in the epigastric region, dizziness, constipation, edema, and failure of vision. (page 198).

The PROPHYLATIC TREATMENT of eclampsia consists in the application of the rules for the proper management of pregnancy. (page 198).

The PREVENTIVE TREATMENT of the convulsions after the premonitory symptoms have appeared are to put the patient to bed and favor elimination. And the cardinal principles of this treatment are mild diet, forcing the fluid intake, free opening of the bowels with saline laxatives, favoring perspiration with hot baths or hot packs, and increasing the elimination of urine with the various diuretics. (pages 201-202).

SYMPTOMS. The attacks are very much alike. The patient after complaining of dizziness or headache has a sudden convulsive stiffening and rigidity of certain muscles which twist the body and face, causing a horrifying appearance and cyanosis; this is soon followed, in a few seconds, by a violent muscular twitching, after which the patient may remain in a state of coma or partial coma for some time. The patient may die during an attack. Injury to the tongue is frequent in these attacks. (page 199).

NURSE'S NOTES

DIAGNOSIS. The convulsions of epilepsy and hysteria may be confused with those of eclampsia. (page 200).

TREATMENT. Upon the appearance of eclamptic convulsions, after sending for a physician, the nurse should put the patient to bed. A mouth gag should be at hand to protect the tongue from injury. The clothing should be removed, an enema given, and a hot pack started. Further procedures will be ordered by the physician and will consist in washing out the stomach, with the introduction of castor oil and croton oil, or magnesium sulphate to promote free purgation. The lowering of the blood pressure by venesection, and such obstetric measures as are considered necessary may then be performed. As a rule, unless the patient is well advanced in labor most physicians continue the eliminative measures for a time. In emergency cases with no means at hand with which to work, restraint of the patient and the prevention of injury to the tongue during convulsions should be remembered. (pages 201-202-203-204).

When eclampsia occurs during labor, early delivery, by forceps, is often indicated, or such simple means as rupturing the membranes may be done to hasten labor. An eclamptic should not nurse her baby until after the first secretion of milk in the breasts has been thoroughly removed with the breast pump.

AFTER CARE. After an attack of eclampsia the patient should be treated for such a period of time as is necessary for the relief of the injury to the kidneys and liver. An attack of eclampsia is often the starting point of a mild persistent kidney disease. (page 244).

Chapter 18, *Cooke's "Handbook of Obstetrics."* (page 244).

ABORTION, signifies the expulsion of the fetus or ovum before the third month. Various terms are used to describe various kinds of abortion:

THREATENED: When there are symptoms of abortion present.

INEVITABLE: When there is no chance of saving the pregnancy.

INCOMPLETE: When part of the ovum has been expelled.

COMPLETE: When the entire ovum has been expelled.

THERAPEUTIC: When the abortion is done to save the mother's life.

CRIMINAL OR ILLEGAL: When it is unlawfully performed to destroy the pregnancy.

SEPTIC: When the abortion is complicated by fever.

ABORTION may be caused by disease of the mother as typhoid fever, or of the uterus, locally, as endometritis, inflammation of the lining membrane of the uterus, or of the ovum, when it is unable to properly imbed itself in the uterus. (page 244).

NURSE'S NOTES

The SYMPTOMS are bleeding and pain, of varying degree. Discharge of part or the whole of the ovum is determined by the nature of the discharged particles, and all blood clots should be saved for examination by the physician. (page 245).

TREATMENT. Treatment of threatened abortion is rest and sedatives. Of most other varieties the treatment is curettage. (page 246).

MISCARRIAGE (page 246) is technically the expulsion of the ovum or fetus from the third to the seventh month. The uterus usually expels the fetus but there is often a retention of the whole or a part of the placenta necessitating operative removal. While after abortion and miscarriage the treatment is the same as after labor, as regards cleanliness and stay in bed, yet after miscarriage attention should be paid to the breasts which will often functionate for a few days.

PREMATURE LABOR (page 252) signifies the expulsion of the fetus from the seventh month to term. It is simply labor in miniature. Again the chief danger is retention of the placenta, and also improper involution of the uterus. The nervous shock associated with many cases of premature labor should be born in mind. The chief nursing care in premature labor is the baby. This subject will be discussed in a subsequent lecture.

PLACENTA PREVIA (page 204) is the name given to the condition when the placenta is situated in an abnormal position, chiefly at or near the internal os, the inner opening of the cervical canal. The cause is a low implantation of the ovum due to an old endometritis. The symptom is painless bleeding at any time during pregnancy, but most often seen at the onset of labor when the dilating cervix pulls loose a part of the placenta.

The placenta previa is termed lateral, partial or central, depending on its relation to the internal os. The treatment is absolute quiet until seen and examined by a physician. The operative treatment depends upon the situation of the placenta and may range from simple rupture of the membranes to forceps delivery, packing with gauze, insertion of bags, version, or Cesarean section.

PREMATURE SEPARATING OF PLACENTA (page 209) is usually the result of some form of trauma, fall or blow, but some cases may result from very simple jars, and others are believed to be due to pathological conditions of the uterine wall or placenta itself. The symptoms are painful hemorrhage or intense abdominal pain when the blood does not escape from the uterus and symptoms of hemorrhage. The treatment is absolute quiet until seen by a physician. The operative treatment depends upon the severity of the case. When the condition develops during labor it must be distinguished from rupture of the uterus.

NURSE'S NOTES

ECTOPIC GESTATION OR EXTRAUTERINE PREGNANCY (page 206) is the development of the fertilized ovum before it reaches the uterus, most often in the tube. Here it develops until the tube is so stretched that the ovum can no longer be contained and it is either extruded from the end of the tube, tubal abortion, or the wall of the tube ruptures, tubal rupture. The symptoms of either of these conditions would be amenorrhea, with other symptoms of early pregnancy, then an attack of sudden abdominal pain and symptoms of internal hemorrhage. The treatment is operative and consists in the removal of the tube and ovum.

Quiz questions for this lecture will be found in *Foot's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 280, 281, 282, 292, 293, 295, 296.

NURSE'S NOTES

LECTURE 5

THE PHENOMENA OF LABOR.

Chapter 7, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 75-80).

LABOR, is the expulsion of the full term ovum from the uterus. It is also known by the various names of "delivery," "confinement," "lying-in" and "parturition." (page 75).

The USUAL TERM for labor to take place is 280 days after conception. (page 75).

VARIATIONS occur in or under certain circumstances, and prolonged pregnancy may have a legal significance. Thus in France a child is considered legitimate if it is born as late as 300 days after the death of the father. Premature labors may occur from a few days to a few weeks ahead of the date calculated. (pages 75-76).

THE CAUSE OF LABOR is probably the reaction of the over-stretched muscular fibres of the uterus at term. This is very likely as is shown when in twins or in case of excessive amount of amniotic fluid labor often begins when the uterus reaches the size of a full term normal pregnancy. (page 76).

THE PREMONITORY SYMPTOMS of labor are well marked in the first pregnancies. They are usually due to the sinking down of the uterus into the pelvis preparatory to the engagement of the head. Thus the embarrassment of heart action and lung expansion will be relieved. The abdomen appears more protuberant, and pressure symptoms are more marked. There is bladder irritability, cramps in the legs, more marked constipation, but on the whole, the woman feels more comfortable. (page 76).

STAGES OF LABOR. Labor may be divided into three stages. (pages 76-77).

FIRST STAGE from the onset of labor to the full dilatation or opening of the cervix.

SECOND STAGE from the full opening of the cervix to the expulsion of the child.

THIRD STAGE from the end of the second stage to the expulsion of the placenta and the contraction and retraction of the uterus.

LABOR PAINS are merely muscular contractions of the uterus, and are called "pains" because of the suffering which accompanies them. (page 77).

NURSE'S NOTES

PHENOMENA OF THE FIRST STAGE. During the first stage the contractions are weak and infrequent. The patient is able to be up and about. As time goes on the contractions become more frequent. The bowels and bladder are emptied frequently. The pains gradually become more frequent and severe. The patient complains of the slow progress. Nausea and vomiting may be present. As the pains increase the cervix opens and the end of the first stage is often marked by the rupture of the bag of waters, the amniotic sac. (pages 77-78).

PHENOMENA OF THE SECOND STAGE. The contractions are now so painful that the patient of her own accord goes to bed. The pains are frequent, coming every 2 or 3 minutes, and are marked by a desire on the part of the patient to bear down; there is a red suffusion of the face and neck during the pains. The patient mumbles and cries out at the acme of the contractions. As the head presses down in the pelvis small particles of fecal material are expressed from the anus, and urine is often expressed. Finally, as the pains increase in severity, the head appears and is born at the acme of a contraction; following the birth of the child the mother gasps for breath and rests. (page 78).

PHENOMENA OF THE THIRD STAGE. After expulsion of the child the uterus shortly again begins its rhythmical contractions, these serve to loosen the placenta and expell it from the cavity of the uterus into the lower uterine segment or vagina, and thence through the vulva with the membranes trailing behind it. (page 79).

TOTAL DURATION OF LABOR. The total duration of labor in normal cases averages 10 hours, the greater part of which time is taken up in the first stage; but the time may vary from 2 to 24 hours without being in any way abnormal or injurious to the patient. (page 79).

THE MECHANISM OF LABOR.

Chapter 10, *Cooke's "Handbook of Obstetrics."* (pages 91-99).

THE THREE IMPORTANT FACTORS to be considered in the expulsion of the full term fetus are, (1st) the passenger, the fetus, (2nd) the passages, the uterus, vagina and vulva, and (3rd) the forces of labor which expell the fetus along the birth canal. (page 91).

THE FORCES OF LABOR may be considered as 2 classes, the expulsive forces, the uterine and abdominal muscles, and the resistant forces, the muscles of the pelvic floor, the tissues of the cervix and the vagina. For labor to terminate naturally the expulsive efforts must be greater than the resistant elements. This slight overbalance prevents prolonged labors on the one hand and too quick a labor on the other hand. (page 91).

NURSE'S NOTES

PRESENTATION refers to the part of the fetus which "presents" in the brim of the pelvis at the beginning of labor. Thus if the head lies in the brim ready to come into the vagina it is called a "vertex" presentation, while if the buttocks present it is called a "breech." (page 91).

POSITION has to do with the relation of the presenting part to the pelvis. Thus in a vertex the position is named from the way the back of the head, the occiput, lies in relation to the mother's pelvis. If in front and on the left it is said to be in the left occiput anterior position, and so on. (pages 91-92).

L. O. A. Occiput to front and left.

R. O. P. Occiput to right and back.

VERTEX PRESENTATIONS occur in about 97 per cent. of all cases, probably because the head is the heaviest part of the fetus and so has a natural tendency to sink to the bottom of the uterus. The position of the vertex presentations is L. O. A. in over 70 per cent. of all cases. (page 92).

FLEXION. In order that the vertex, or top of the head may present, the head must be tipped over on the chest or flexed, and this flexion increases as labor progresses until the head has passed through the brim of the pelvis and is in the vagina. (page 92).

ROTATION. While the head is thus flexing in descending it meets with the resistance of the inclined walls of the pelvis and this resistance causes the presenting part to rotate forward until the occiput or back of the head lies just behind the symphysis or pubic joint.

EXTENSION. As soon as the completely flexed head has passed through the pelvic brim and lies with the occiput under the symphysis the process of extension begins. The chin is now raised by the expulsive forces from the baby's chest and is raised over the pelvic floor and perineum until the chin is born, when the occiput which has been acting as a pivot for this movement is also born and then the head rotates back to its original position to regain its original relation to the unborn shoulders. This is called—

EXTERNAL ROTATION OR RESTITUTION. After this movement the body of the child is usually born by further expulsive effort on the part of the mother. (pages 92-93).

FACE PRESENTATION, occurs when the head is extended or tipped back on the body of the child. It usually demands operative interference. (page 94).

BROW PRESENTATIONS are those midway between face and vertex, and occur when the head is neither fully flexed or extended. They usually become converted into vertex presentations by further flexion as labor proceeds. (page 95).

NURSE'S NOTES

BREECH PRESENTATIONS are those in which the breech instead of the vertex presents at the pelvic brim. They are fairly common, the chief danger being that as labor advances the arms are liable to become extended above the head of the fetus and interfere with its passage through the pelvis. The discharge of meconium is a sign of a breech presentation, as during labor the child's body is squeezed so firmly that the meconium is pressed out and passes down the birth canal. (pages 95-96).

L. SC. A., or left sacrum anterior, signifies that the breech is presenting and the position of the sacrum is on the left side and anterior; this corresponds to the naming of the vertex positions. (page 96).

TRANSVERSE POSITION, or cross positions are usually found in women who have born many children, or where some deformity or tumor complicates pregnancy, or one of twins may be in the transverse position. The child may be in a transverse presentation with arm, hand, shoulder or back as the part lying directly over the cervix. Such cases are treated by version as a rule. (page 97).

OBSTETRICAL DIAGNOSIS.

INSPECTION of the abdomen gives little information other than perceiving foetal movements and uterine contractions and the general size of the pregnancy.

PALPATION reveals the position of the fetus; the palpation should be gentle, and carried out by placing the flat hands upon the abdomen so as not to provoke a uterine contraction. The fundus, the lower part of the uterus and the flanks should be palpated in turn; the head is distinguished as a hard round body. The back as a smooth broad resistant surface; the extremities as small rounded knobs.

AUSCULTATION reveals the position of the foetal heart and its rate. (page 97).

PELVIMETRY or pelvic measurement shows the relative size of the pelvis, and although it should be a routine, the size of the foetal head is the real pelvimeter. (page 98).

VAGINAL EXAMINATION reveals the condition of the soft parts, the degree of dilatation of the cervix, the state of the membranes, and the position of the sutures and fontanelles in the vertex cases.

PREPARATION FOR LABOR.

Chapters 12 and 13, *Cooke's "Handbook"* should be read by the nurse. (pages 118-135).

ROOM. If the patient is to be confined at home the labor room should be the largest, sunniest available room, and should have received proper cleaning. (page 125).

NURSE'S NOTES

BASSINETTE. A proper bassinette should be provided for the baby, the simpler and more utilitarian the better. (page 127).

PREPARATION OF BED. The labor bed should be so arranged that after labor the extra coverings of rubber sheeting and draw sheets may be quickly and easily removed. The use of an ironing board or table top will often give the necessary rigidity to an otherwise saggy and unsuitable bed. (pages 128-129).

PATIENT. A full bath should be given at the onset of labor. If ordered the vulva should be clipped or shaved. A soap suds enema should be given at the onset of labor. (page 130).

ARTICLES NEEDED. A suitable list of necessary articles, sterile goods and supplies should be provided for during the last month of pregnancy. (pages 121-124).

CONDUCT OF LABOR.

Chapter 14, *Cooke's "Handbook of Obstetrics."* (pages 135-162).

FALSE AND TRUE PAINS should be distinguished by the nurse. *False* pains are often seen for several weeks before labor and are usually merely cramp like pains of irregular frequency, and due both to the contractions of the uterus and to pressure. *True* labor pains occur at regular intervals, are accompanied by the discharge of a blood-stained mucus discharge and are best distinguished by their regularity and the fact that the patient really feels pain with them.

As soon as true pains appear the patient should be prepared for labor by bath and enema, and the necessary supplies arranged within easy reach.

RUPTURE OF MEMBRANES. This usually occurs at the end of the first stage and if the patient is not in bed, she should be kept there until the arrival of the physician. Under no circumstances should the patient be allowed to use the toilet after the membranes have ruptured.

ANESTHESIA. The physician will direct the use and degree of anesthesia, as well as choose the agent.

CORD. After the birth of the child the cord is ligated with two ligatures and cut between.

PLACENTA. A basin should be provided for the placenta, and it should not be discarded until it has been examined by the physician.

Quiz questions for the lecture will be found in *Foot's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 296, 297, 298, 299, 300, 301.

NURSE'S NOTES

LECTURE 6

PATHOLOGY OF LABOR.

Chapters 17 and 19, *Cooke's "Handbook of Obstetrics."* 9th edition. (pages 214-244-253-274).

PRECIPITATE LABOR. In many cases because of the rapidity or severity of the pains the birth may occur before medical aid may be summoned. Such labors occur most often in multiparous women and also in premature births. It will often be impossible to make the usual preparation of the patient. The points to be noted and remembered are as strict antisepsis as possible, careful tying of the cord and not to interfere with the third stage but after the placenta has been delivered to guard against hemorrhage by holding the fundus till the uterus is firmly and permanently contracted. (pages 149-260).

DYSTOCIA or difficult labor. This term comprises both delayed labor, where birth is possible and obstructed labor where operative interference is usually necessary, in one form or another.

TOO WEAK PAINS or sluggishness of the uterine muscle is often responsible for delay in the first stage. This condition may be disregarded, or treated by such stimulants as hot coffee, enemas, walking the patient, or such drugs as the medical attendant may advise. Should the patient tire from a prolonged first stage, rest and sleep are advised and should be procured by drugs given under medical supervision. (page 222).

RIGID CERVIX. There is often seen especially in old primiparas a peculiar spasm like rigidity of the muscle fibres of the cervix. It is frequent in cases where the membranes rupture early. Careful watching and waiting will give nature time to dilate slowly, or bags, or manual dilatation may be resorted to by the attendant. (page 222).

RIGID PERINEUM is a cause of delay in the latter part of the second stage. If the head rests too long upon the perineum a cutting operation called episiotomy will relieve the obstruction and permit delivery of the head. This makes a clean wound which is sutured after the labor is complete. (page 237).

BREECH presentations are often slow because the soft breech does not stimulate the cervix as does the hard head. Careful delay in operative extraction gives the best results, although for the interest of the child operation is sometimes resorted to.

NURSE'S NOTES

OVERGROWTH OF CHILD, in a case where the pelvis is normal is a frequent cause of delay. In most instances the head will mould sufficiently to pass through the pelvis, though this cause is a frequent indication for forceps delivery.

SHORT CORD. Where the cord is abnormally short or is shortened by being turned around the child's neck or body, labor is often delayed until the cord is slipped off the body in labor or over the head after birth or after the placenta has been loosened from its attachment during labor. In all cases of delayed labor the foetal heart should frequently be counted by the nurse in charge.

MALPOSITION OF HEAD. When the occiput is posterior the length of time necessary for its forward rotation is often very long and delays labor. If the condition of both mother and child continues good the labor may be allowed to continue for a time, but this condition of the head is a frequent cause for operative interference either by forceps or version.

OBSTRUCTED LABOR occurs when there is little or no chance of the child being born by the natural passages by the mother's efforts. It may be caused by such conditions as the following:

OVERGROWTH OF CHILD. Where the child is so overgrown that its size makes delivery through a normal pelvis impossible, Cesarean section must be resorted to, or else a mutilating operation such a craniotomy, if the child is dead.

CONTRACTED PELVES of various kinds, contracted from side to side, from front to back, or funnel shaped, or associated with deformities of the back will act as mechanical obstructions to natural birth. Operative interference, Cesarean section, is indicated. (pages 31-33).

HYDROCEPHALUS, an enlargement of the child's head, through an overproduction of the cerebro-spinal fluid, will obstruct labor. If the condition is recognized perforation of the head is indicated, after which labor may terminate naturally or may be finished by version.

TUMORS—MONSTERS. Such conditions as tumors of the pelvis or unusual deformities of the fetus will act as mechanical obstructions to natural births and must be treated by such operative measures as are indicated.

RUPTURE OF UTERUS, occurs from an overstretching of the uterus during labor, usually in neglected labor in a contracted pelvis. The rupture usually occurs in the over-stretched lower uterine segment. A premonitory sign is a ring across the uterus, looking much like the upper border of a distended bladder. Rupture of the uterus is followed by extrusion of the child through the rent and cessation of labor. The patient dies of shock or hemorrhage unless immediately operated upon. (page 257).

NURSE'S NOTES

POST PARTUM HEMORRHAGE occurs from a lack of proper contraction of the uterus with a stopping of the sinuses at the placental attachment. The uterus will be felt to be relaxed and flabby. (pages 265-270).

This RELAXATION OF THE UTERUS may be caused by weakness of the uterus after prolonged delivery, or by prolonged operative delivery, by cases of albuminuria or toxemia where the muscle is really poisoned, and also to lack of proper attention to the fundus after the placenta is delivered.

SYMPTOMS are profuse bleeding with signs of hemorrhage as weakness, air hunger, pallor and shock.

TREATMENT. The quickest treatment is to grasp and massage the fundus, thus promoting uterine contractions. Ergot should be administered at once, as should also pituitrin if at hand. Hot douches may be given, but if the hemorrhage is extreme uterine packing must be done. (page 270).

LACERATION OF BIRTH CANAL, causes hemorrhage in the absence of uterine relaxation. External tears may be seen, but tears in the cervix and vaginal wall may escape notice until the hemorrhage occurs after the labor is complete and the uterus contracted. The treatment is to suture the laceration. Packing may be resorted to in some cases. (pages 40-171).

RETAINED PLACENTA is the name given to the condition when the placenta has been detached from the uterine wall but is retained in the cavity of the uterus usually by a too firm contraction of the cervix. There is often some hemorrhage. The treatment is expression by the Crede method. Retained placenta is often caused by too early an attempt to squeeze out the placenta. (pages 245-252-262).

ADHERENT PLACENTA is an unnaturally firm attachment of the placenta to the uterine wall. Non-delivery of the placenta with no hemorrhage after the usual time for its delivery and failure to express the placenta by the Crede method are signs of an adherent placenta. Manual extraction may be resorted to; here the hand is inserted into the uterus and the placenta gently shelled off the uterine wall, and the hand grasping the placenta allowed to be extruded by a uterine contraction. (page 263).

INVERSION OF THE UTERUS is the name given to the rare condition when the organ is turned inside out and the inner wall of the uterus projects down into the vagina and through the vulva looking like a red tumor. It is usually caused by improper handling of the third stage. Symptoms are hemorrhage and shock. Treatment is usually surgical to replace the uterus, and measures to combat the shock and hemorrhage. (page 154).

NURSE'S NOTES

PROLAPSE OF THE CORD may occur when the membranes rupture if the head or breech is not engaged sufficiently in the pelvic brim to prevent the cord from being carried down by the rush of escaping fluid. It often occurs as a complication of premature birth, twins and transverse positions and is more frequent in multiparas. Treatment is to place the patient in the Trendelenburg or knee chest position to relieve any pressure of the presenting part of the cord. The operative treatment is usually version. (pages 259-260).

DRY LABOR is caused by too early rupture of the membranes. This may occur at the very beginning of labor. It is usually accompanied by a slow dilatation of the cervix and a prolongation of the labor. There is a greater tendency to infection, and the most scrupulous attention must be paid to keeping the parts clean. The treatment is often surgical, dilatation of the cervix by bags or by manual dilatation, and use of forceps. (page 242).

TRANSVERSE POSITIONS are discovered on abdominal and vaginal examination. The treatment is usual operative. Occasionally a partial transverse position of the child may be changed to head or breech during labor but this is unusual. Prolapse of the cord and rupture of the uterus must be guarded against in a transverse case. (page 215).

Quiz questions on this lecture will be found in *Foot's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 300, 301, 305, 306, 308.

NURSE'S NOTES

LECTURE 7

OPERATIVE DELIVERY.

Chapter 17, *Cooke's "Handbook of Obstetrics."* 10th edition.

INDUCTION OF LABOR AND ABORTION. (page 242).

INDICATIONS. Slight pelvic deformity, toxemia of pregnancy and prolongation of labor. In case of pelvic deformity labor is usually induced about the 36th or 38th week.

METHODS vary according to the operator and the indication. (page 242).

1. GAUZE method consists in packing the canal of the cervix tightly with a strip of plain sterile or iodoform gauze. Soaking the gauze in glycerin is believed to hasten the softening and dilatation of the cervix. (page 242).

2. TUBE (page 242) method consists in the introduction under aseptic precautions of a rubber tube, rectal tube generally, into the cavity of the uterus, through the cervix. (page 242).

3. BAG (page 224) method consists in the dilatation of the cervix by instruments, dilators, and the introduction of a folded empty conical shaped rubber bag. After the bag has been introduced into the lower uterine segment, it is filled with sterile water by a syringe, the tube leading from it tied and the vagina loosely packed with gauze. All these methods depend upon the irritation of the uterine muscle by a foreign body with resulting contractions in the effort of the uterus to expel the foreign body and as a result labor occurs. (pages 222-223-224).

CURETTAGE (page 251) is performed for incomplete miscarriage or abortion or to remove pieces of the placenta or membrane after labor. After the proper preparations the perineum is depressed by a retractor exposing the cervix which is grasped with a tenaculum or bullet forceps and drawn forward. The cervix is then dilated if it is closed, and a careful exploration of the interior made with a placental forceps. After the larger pieces of ovum, fetus, placenta, or membranes have been removed with the forceps, a curette is inserted and the walls of the uterus gently scraped to remove the smaller particles. The uterus is usually packed with gauze to favor involution and prevent hemorrhage.

DILATING CERVIX. In case of a rigid or non-dilating cervix in labor the operator may decide to dilate by various means.

NURSE'S NOTES

(1) MANUALLY. In the manual method the fingers of one or both hands are used to stretch the external os, the cervix or the whole canal.

(2) BAG. The bag method consists in inserting a bag which is larger than the diameter of the cervix and having traction made upon it at intervals or continuously by a weight. This gradually, mechanically forces the cervix open sufficiently for other procedures to be permitted.

(3) INSTRUMENTALLY. The cervix may be dilated instrumentally by various metal dilators which act in a similar way to the stretching by the fingers, only in a more powerful manner.

FORCEPS (page 217) are merely metal hands which grasp the head and allow it to be pulled down and out of the pelvis.

INDICATIONS (page 222). Low and medium forceps are chiefly indicated in cases of uterine inertia, when the patient is exhausted after prolonged expulsive efforts, and high forceps are indicated in case of slight pelvic deformity.

REQUIREMENTS. Membranes ruptured, and cervix fully dilated; bowels and bladder empty.

LOW FORCEPS (page 217). The low operation is done when the head lies well down on the perineum and pushes forward the vulva so that it is, in many cases, in plain sight.

MID FORCEPS (page 217) is done when the head has passed through the brim but lies in the vagina and does not yet distend the vulva.

HIGH FORCEPS (page 217). The high forceps operation is done when the head is at or above the pelvic brim. It is extremely dangerous to the mother on account of lacerations and to the child from compression of the head.

VERSION (page 215) is a non-cutting non-instrumental operation which consists in turning the fetus from an undesirable to a more advantageous position in the uterus. It is done with the hands. It may be done by external manipulation, by internal manipulation, or, by a combination of the two methods. External version can only be done before labor, or before the membranes have ruptured and is used to convert a breech or transverse position into a vertex. Internal version calls for a general anesthetic. It is done by inserting the whole hand into the uterus and grasping a foot which is brought down, the child turning as traction is made on the foot.

BREECH (page 155). In breech deliveries most operators favor interference when the head is born. The body is allowed to be delivered normally until the breech presents. Then traction on the hips delivers the body. The body is now lifted to one side and the fingers slipped up along the body in the vagina;

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sweep the arm down alongside the head and body. The body is then lifted to the opposite side and the other arm is delivered in a similar manner. The body is now placed astride an arm of the operator and the middle finger placed in the mouth to favor flexion. Supra pubic pressure now delivers the head.

MUTILATING OPERATIONS (page 237) are performed when the child is dead or deformed or when pelvic deformity is present under such circumstances that Cesarean section cannot be performed.

EMBRYOTOMY is the general term for mutilating operations; it is further divided into terms for special operations.

CRANIOTOMY consists in perforating the head and crushing the skull to permit the passage of the head. It is done in such conditions as hydrocephalus, or too large a head in a breech case, or in a head presentation when the child is dead. The instruments used are a perforator and a crushing forceps called the cranioclast.

DECAPITATION is an operation consisting in severing the head from the body with a sharp hook or scissors. It is done at times in transverse presentations, or in twins when 'locking' of the bodies occurs.

EVISCERATION is the evacuation of the chest and abdomen of the child in such cases as impacted transverse presentations or when there is a tumor formation or disease of the organs causing dystocia. The operation is carried out with stout scissors and forceps.

CESAREAN SECTION (page 225) consists in the delivery of the child by abdominal section and cutting open the uterus, delivering the child and placenta and suturing the incisions.

INDICATION. The indications are relative and absolute. Relative indications are eclampsia and placenta previa where birth by the natural passages is impossible, but section is chosen in the interest of the mother or child. Absolute indications are such as contracted pelvis, tumors and overgrowth of the child.

METHODS. There are two methods. In one the uterus is opened and sutured after delivery; in the second the uterus is removed after the child and placenta are delivered. Both have various modifications according to the conditions present and to the ideas of the operator.

BABY. Especial care should be taken of the baby born at Cesarean section, not only on account of the condition for which the operation may be indicated, as eclampsia or a prolonged ineffectual labor, but also on account of the anesthesia to which it has been subjected.

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NURSING CARE in case of Cesarean section is the same as in other abdominal sections with the extra care that no infection may enter from below.

CREDE EXPRESSION OF PLACENTA (page 263) is used in case of retained placenta and always in adherent placenta before manual extraction is resorted to. The placenta is squeezed out of the uterus as one squeezes a pit of a cherry. The fundus is grasped firmly in the hand with the fingers behind and the thumb resting on the front of the uterus. The uterus is squeezed downward and forward during a pain when the placenta escapes through the cervix.

MANUAL EXTRACTION (page 263). Manual extraction of the placenta is used in case of adherent placenta or in retained placenta where the Crede method fails. In manual extraction as in all intra-uterine manipulations the utmost care must be observed not to carry infection to the placental site. The gloved hand is inserted into the uterus and the placenta gently raised from the wall of the uterus by first freeing one edge and then elevating the remainder of the placenta. The hand now grasps the placenta and is pushed out by supra pubic pressure during a pain. Care must be taken to avoid inversion of the uterus.

LACERATIONS (page 264) of the cervix, vaginal wall and the perineum are caused by overstretching of the parts. Serious hemorrhage may result. The lacerations may be sutured immediately to control hemorrhage or to effect a repair; or they may be allowed to remain for a few days and be repaired by a secondary operation when the bruising and edema will have disappeared to sufficient extent to permit a more satisfactory operative result.

TAMPONING UTERUS AND VAGINA (page 266). In case of severe and otherwise uncontrollable hemorrhage resort may be had to tamponing the uterus and vagina. Tamponing the vagina alone will do no good unless the hemorrhage is from the cervix or vaginal walls. In tamponing the uterus long gauze strips are used. The cervix is drawn down to the vulva and the packing introduced by a pair of dressing forceps. The packing must be carried to the fundus and then the remainder of the uterine cavity packed tight. Following this the vagina is tightly packed and pressure made by pads above the fundus and on the perineum.

DOUCHE (page 267). Hot douches are often used to check uterine hemorrhage. Irrigation cans and tubes and douche nozzles should be prepared for every delivery no matter how normal it may appear during labor. The douche should be copious and the water should be at a temperature of 110 degrees.

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HYPODERMOCLYSIS (page 271) is often useful to combat shock from hemorrhage or from a prolonged labor. Saline solution at 100 degrees temperature is inserted under the breasts by two needles. Ordinary skin disinfection by painting with iodine is sufficient in an emergency. The breasts are capable of absorbing at least a pint in each at one time. If necessary the solution may also be given in the back or thighs.

INTRAVENOUS INJECTIONS are emergency measures to combat shock and hemorrhage. An outfit of instruments and needles and cannulas should be kept ready in every delivery room. Not more than a pint of solution should be given at a time. The addition of adrenalin chloride solution will aid in preventing cardiac collapse by its action on the blood vessels.

Quiz questions on this lecture will be found in *Foot's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 283-289-306.

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LECTURE 8

PUERPERIUM.

Chapters 8, 15 and 20, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 80, 84, 162, 183, 274, 290).

THE PHYSIOLOGY OF THE PUERPERIUM.

PUERPERIUM (page 80). The puerperium is a period of convalescence extending from the end of the third stage of labor until the patient is fully recovered from its effects. (page 80).

The natural relaxation following the severe physical exercise of labor is usually followed by a tendency to sleep, and this should be encouraged by as quick and expeditious a toilet and rearrangement of the room as possible.

CHILL. A chill occurring immediately after labor and due partly to a disturbance of equilibrium between external and internal temperature, caused by excessive perspiration, and the loss of a great amount of tissue from the abdominal cavity is not infrequent. Hot water bottles and a warm drink are sufficient means of treatment. (page 80).

The PULSE of a parturient drops to as low as 60 per minute after labor. This is in part due to lowered arterial tension. A rapid pulse after labor is indicative of shock or possible concealed hemorrhage. (page 80).

TEMPERATURE usually rises slightly due to tissue bruising. 100.5 is regarded as the high limit in normal cases. (page 81).

The UTERUS begins to return to its normal condition with the beginning of labor.

INVOLUTION. This process is called INVOLUTION, and consists in the contraction of the muscle and in the destruction of part of the tissues which are carried off in the discharge of blood and serum. Normally involution requires six weeks, at the end of which time the uterus will have returned to nearly its non-pregnant state. (page 81).

SUBINVOLUTION is the term used to describe the condition which exists when involution is not complete at the time when it should be. The uterus remains large, flabby and more or less congested, causing irregular bleeding and discomfort. (page 81).

LOCHIA is the name given to the discharge which comes from the uterus for about three weeks after the birth of the child. It consists of blood, serum, decidua and mucus. It should have no odor. After a few days the bright

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color changes to a pink, later to a yellow-green color. The lochia may be suppressed or may return for a few days after the patient rises from the bed. (page 82).

AFTER PAINS are painful contractions of the uterus due most often to its efforts to expell blood clots. They are more common in women whose tissues are soft and flabby and who have born many children. They may occur from extreme contractions of the uterus when no blood clot is present. They usually disappear about the fourth day. (page 82).

RETENTION OF URINE is not uncommon for a few days due to the bruising of the urethra and base of the bladder during labor. (page 83).

CONSTIPATION is the rule in the puerperium due to the relaxed condition of the intestines and the inability of many people to empty the bowels while in the dorsal position. (page 83).

APPETITE. The appetite is usually diminished. This combined with the markedly increased secretions causes a loss in weight. (page 83).

MILK FEVER, a term given to the transient rise in temperature on the third day when the breasts become tense is a misnomer. This slight rise is no doubt due to a light pelvic infection. (page 83).

THE MANAGEMENT OF THE PUERPERIUM.

Chapter 15, *Cooke's "Handbook of Obstetrics."* 10th Edition. (pages 162-183).

HOLDING THE UTERUS for an hour after the completion of the third stage is the most important thing that can be done at this time. This safeguards against post-partum hemorrhage from uterine relaxation to an unappreciated degree. Kneading is unnecessary unless relaxation occurs. (page 162).

CLEANSING THE PATIENT. After the delivery of the placenta and while the uterus is being held by physician or nurse the patient should have a careful toilet of the perineal region with green soap and water and a vulvar pad applied. (pages 163-164).

BINDER. After the patient's toilet has been completed and fundus held for an hour, if no hemorrhage is present and the uterus well contracted a binder may be applied.

The OBJECTS OF THE ABDOMINAL BINDER are three in number. (page 166-167).

First: Prevention of hemorrhage by keeping a firm pressure on the uterus. Second: To make the woman comfortable by preventing cerebral anemia, with its accompanying dizziness, headache and even syncope. Third: It brings the recti muscles together and thus prevents disastasis. The binder may be removed after the third day, if preferred.

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CLEANSING PATIENT. The cardinal rule in the puerperal toilet is that all cleansing strokes of swabs or cotton balls should be toward the anus and that but one stroke should be taken with each swab. (page 170.)

URINATION (page 172). If the patient does not urinate naturally by the end of twelve hours after labor, and if such means as the sound of running water, hot water bottle over the pubis, hot solution poured over the perineum or warm enema does not bring on the act, the patient should be catheterized. This operation should be continued at intervals of 6 hours if necessary.

DEFECATION. The patient's bowels which should have been emptied by enema at the beginning of labor, do not need further attention until the second or third day. At this time a brisk saline purge will often assist in reducing the mammary congestion as well as emptying the bowels. After this the bowels may be moved every second day by enema. The early resumption of a normal diet assists in preventing constipation.

VAGINAL DOUCHES should never be given unless by the physician's orders. Important procedures in the giving of a vaginal douche in the puerperium are the careful cleansing of the perineal region, the separation of the vulva before inserting the nozzle and the limiting of height of the irrigating can of solution to two or three feet above the level of the bed. (page 176).

TEMPERATURE, PULSE and RESPIRATION should be charted every four hours for the first week. (page 177).

The DIET during the puerperium should be of a simple and nourishing character. (page 179).

BREASTS (page 280). The breasts should be supported if necessary by a binder. The nipples covered with small gauze squares, changed daily. The nipples should be sponged with boric acid solution before and after each feeding.

SITTING UP AND GETTING OUT OF BED. A normal patient may be allowed to sit up in bed after a week and may sit out of bed after two weeks. In many cases this time will have to be shortened and in some cases it may be found well to increase the time spent in bed. A parturient woman should have two periods of rest in bed daily during the first six weeks, and should not use the stairs before a month after the birth of the child. (page 181).

PATHOLOGY OF THE PUERPERIUM.

Chapter 20, *Cooke's "Handbook of Obstetrics."* (pages 274-290).

PUERPERAL FEVER is an infection of the puerperal mother, usually resulting from the introduction of bacteria at the time of labor from the hands or instruments of the physician, or later of the nurse. (page 274).

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VARIETIES. There are several types of puerperal infection, each of which in its typical form presents a very characteristic set of symptoms, but usually they are so merged as to be difficult of distinction. (page 275).

The **ONSET** of puerperal infection usually occurs at the third or fourth day. The early **SYMPTOMS** are malaise, headache, backache and general discomfort. This is followed by a distinct chill and rise in temperature to 104 to 106. The pulse becomes rapid and feeble, and the respirations are increased. The tongue is heavily coated and constipation is the rule. (page 275).

The lochia stops or may become dark and offensive. The abdomen may be slightly tender over the uterus or adnexa until peritonitis develops when there is the usual general tympanites and rigidity. Vomiting or septic diarrhea may occur. The secretion of milk ceases. The urine is scant. Delirium and stupor followed by coma and death may be the termination.

TREATMENT. The **TREATMENT** is prophylactic and preventive by applying rules of aseptic surgery to the parturient woman. After fever develops the treatment is by tonics, stimulants and supporting measures as diet and careful nursing. It may be found necessary or advisable to explore the interior of the uterus. (pages 275-276).

SAPREMIA is the name given to a condition of the parturient when caused by saprophytic decomposition of retained placenta or membranes. In sapremia the lochia has an offensive odor, as a rule, and there is no blood stream infection by pathogenic organisms.

MILK LEG (page 277) is a disease of the puerperium characterized by pain and swelling in the affected limb due to the formation of a clot in the veins of the leg itself or in those of the pelvis, interfering with the return circulation of the blood.

CAUSE. It is due to septic infection extending from the uterus to the veins of the pelvis and thence down the leg.

The **SYMPTOMS** are chilliness, malaise, fever, pain in the groin, stiffness and pain in the affected leg. The leg is swollen and intensely painful.

TREATMENT consists of absolute rest of the affected leg until all symptoms have disappeared and the temperature and pulse have been normal for a week.

DISEASES OF NIPPLES AND BREASTS. (pages 279-280)

EROSIONS are minute fissures in the surface of the nipple.

The **SYMPTOMS** are pain during nursing, the expression of a drop or so of blood, and the presence of the fissure on examination.

TREATMENT—**PROPHYLATIC** treatment consists in the careful cleansing of the nipples during the latter part of pregnancy and in certain cases the appli-

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cation of a weak alcoholic solution to harden the nipples. In some cases the application of cold cream will serve to properly prepare the nipples. Immediately after birth the nipples should be covered with small gauze squares and these should be changed daily.

The CURATIVE treatment of fissured nipples consists in the application of various substances as silver nitrate to the nipple, the wearing of a lead nipple shield between the nursings, and the use of a nipple shield during the nursing. It may be advisable to stop nursing from a breast for a few hours. In which case the collected milk should be pumped or the breast massaged.

BREAST MASSAGE should always be carried out in a systematic manner. The steps are best shown by the illustrations in Fig. 133, *Cooke's "Handbook of Obstetrics."*

SHIELDS. The lead nipple shield is believed to exercise a specific action on the fissured nipple, but the good results are due more likely to the absolute protection it gives. The nipple shield used during nursing should closely approximate the maternal nipple.

MASTITIS or inflammation of the breasts may range from simple congestion to an active suppurative process. Simple congestion occurs about the third day from over-activity of the breast tissue. The application of a breast binder, restriction of liquids for a few hours and a brisk saline purge will usually suffice to check the condition.

INFECTION OF THE BREASTS occurs most often through the entrance of bacteria through a fissure or erosion of the nipple.

The SYMPTOMS are discomfort and pain in the breast, with a chill and rise of temperature. On inspection the breast will be found red, tense, hard and exquisitely painful. Immediate and energetic TREATMENT may check the process. Snug breast binder, ice caps, restriction of liquids and free saline catharsis may be tried. Should the abortive measures fail and an abscess form, one or more of the hard lumpy divisions of the breast will present fluctuation. Immediate incision and drainage are now required. The after care is that of any surgical condition. After subsidence and healing, breast feeding may in some cases be resumed, but in most cases the child will be weaned.

HYSTERIA is occasionally seen during the puerperium, and may mimic the seizures of post-partum eclampsia. (page 287).

INSANITY is sometimes seen during the puerperium; the prognosis is usually favorable. The greatest danger is injury to the child, or attempts at self-destruction. (page 287).

Quiz questions on this lecture will be found in *Foote's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 302, 303, 304, 305, 309, 310, 311, 312.

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LECTURE 9

THE CARE OF THE NORMAL INFANT.

Chapter 21, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 290-299).

EYES. The first attention given to the new born child after the cord has been tied and cut consists in washing the eyes from the inner angle outward with boric acid solution. Following this the lids are separated and a drop of a 1 per cent. solution of silver nitrate is instilled into each eye. The eyes are then flushed with saline solution to neutralize the nitrate or with boric acid solution. (page 290).

OIL BATH. The vernix caseosa, or cheesy greasy material is softened for removal by anointing the child with sterile oil, albolene or vaseline. This softens and removes the vernix. The child is given a daily sponge bath on a table or slab and is not given a tub bath until the cord has dropped off. (page 292).

CORD DRESSING. The primary cord dressing is of gauze. A square with a central slit or cut is placed over the cord and the corners turned up to protect the cord. The dressing may be changed daily if it becomes soiled or wet. Otherwise it may remain in place until the cord has separated. (page 293).

DETACHMENT OF CORD. The cord becomes separated from the baby's body by dry gangrene. It may separate from the fourth to the tenth day. When it separates there is often a drop or so of blood on the dressings. The stump should be dressed with a clean square of gauze until retraction occurs. (page 294).

The **TEMPERATURE, HEART-RATE** and **RESPIRATION** rate should be observed at regular intervals.

SLEEP. An effort should be made to have the baby sleep as much of the time as possible during its first days. Conducive to this training, regular feeding and bathing and avoidance of disturbing the baby. (page 294).

ADHERENT FORESKIN. Circumcision should be performed except in rare instances. At times stretching and retracting the foreskin will serve the purpose, but the nurse should be instructed to retract the foreskin daily to prevent a recurrence of the adhesions. (page 296).

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CHAFING, SCALDING, ECZEMA INTERTRIGO. All result from uncleanness or allowing the infant to remain wetted for a long period of time. All irritations of the genitalia should be treated with absolute cleanliness and the parts kept dry. Soap and water are to be avoided and a dusting of stearate of zinc or a similiar preparation used. (page 297).

WEIGHT. The initial weight drops during the first three or four days. Part of this loss may be avoided by giving regular feedings of a five per cent. sugar solution during the first three days until the milk is established. A normal child should have recovered its birth weight by the end of the second week. (page 297).

NURSING AND THE BABY OUTFIT.

Chapter 22, *Cooke's "Handbook of Obstetrics."* (pages 299-316).

ROOM. If possible the baby should be established in a separate room to render secure from infections and accidents. This should be a large sunny and well ventilated room, with facilities for furnishing a proper temperature. (pages 299-300).

TABLE. A small low table should be provided for the bathing and clothing of the baby. The older method of bathing the baby on the knees pre-disposes in hospital practice to spreading infections and in homes to at least the remote danger of chilling and accidents. (page 302).

SOAP. A powdered castile soap will be found preferable to the individual cake which lends itself to favoring infections.

DIAPER. Should be sterilized by boiling after having been washed and a sufficient number should be provided. Paper diapers have been used in hospital practice but are unsatisfactory. The shaped diaper with tapes, page 306, *Cooke's "Handbook,"* are to be recommended. (page 304).

TEMPERATURE of the nursery should be about 70 to 75 degrees.

BATH TEMPERATURE. The temperature of the infant's bath should be varied according to its age and strength but during the first year it should be little lower than 98 degrees.

JAUNDICE. A slight jaundice is often noticed during the first week of life. This probably results from the establishment of liver and blood cell destruction. It passes away without treatment. (page 311).

SEBORRHOEA CAPITIS is a scaly dermatitis of the scalp resulting from improper cleansing. The thickened crusts of sebaceous material may be removed by applying warm olive oil. (page 311).

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PREMATURE AND FEEBLE INFANTS.

Chapter 24, *Cooke's "Handbook of Obstetrics."* (pages 348-359).

The WEIGHT of an infant is the best indication of its ability to fight its own battles after birth. A premature infant weighing five pounds requires little more attention than a full term baby which weighs the same. (page 348).

CLOTHING. As a general rule it may be said that an infant weighing four and a half and five and a half pounds should be kept warm by flannel garments and coverings, while one weighing less than four and a half pounds should be placed in the incubator. The custom of clothing premature infants in cotton jackets is being given up and woolen garments are being substituted.

INCUBATION. Most maternity hospitals or those having large maternity services are provided with some type of electric or gas heated incubator. For home use an incubator may be improvised by lining a box or basket with blankets and keeping up sufficient heat by the use of hot water bottles or electric pad heaters. In the delivery of a premature infant means should be at hand to prevent the primary chill following delivery which often turns the balance against a premature infant. (page 348).

REST. A premature infant should be disturbed as little as possible. Handling unnecessarily is to be avoided. (page 354).

MANIPULATION. Should be limited to the daily anointing with lard or oil, and changing the clothing and the feeding. (page 354).

BATHING is usually contraindicated except for purposes of cleanliness. The oil rubs will serve for cleansing. If the infant improves it may be immersed once a day after the cord has separated in a bath of about 105 degrees for a few minutes. (page 355).

The WEIGHT AND TEMPERATURE should be taken daily at the time when the clothing is changed. These observations should be carefully recorded.

FOOD. The best food for a premature infant is mother's milk. Not only for the reason that it is especially adapted to the needs of the child, but also because it is desirable to keep up the secretion of the breasts for later direct breast feeding. (page 355).

BREAST PUMPS. The milk may be expressed from the breasts by massage or by breast pumps. It should be received into a clean cup and be fed at once before it cools. The most satisfactory type of breast pump is the English model. (Fig. 173, *Cooke's Handbook.*)

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BRECK'S FEEDER. The milk may be given the infant in a bottle, or fed by a medicine dropper or by a Breck's feeder, which measures accurately the amount given. All instruments used in connection with the feeding of premature or feeble infants should be kept scrupulously clean. A premature child should be fed oftener and in less amount than a healthy infant. (page 357).

AMOUNT. The amount in the beginning should be from a half a dram, and increased by the day.

FREQUENCY. In the beginning the premature infant should be fed every hour. The interval between feedings may be lengthened as the conditions improve.

BREAST FEEDING. Breast feeding should be resorted to when the infant seems able to nurse satisfactorily from a nipple. The ability to nurse satisfactorily at the breast may take a longer time than might be expected. (page 359).

DISEASES. The premature child is much more likely to develop the conditions to which infants are subject, but if it can be made to live and thrive for the first few weeks there should be no reason why with care it will not do as well as any other baby.

RECAPITULATION. The three essential factors in the care and management of a premature or feeble infant are: 1. Maintain its body temperature; 2. Provide nourishment which it can assimilate readily. 3. Insure its absolute rest and quiet at all times.

Quiz questions for this lecture will be found in *Foot's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 311, 312, 313, 314, 315, 316, 317, 318.

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LECTURE 10

ACCIDENTS, INJURIES AND DISEASES OF THE NEW BORN.

Chapter 23, *Cooke's "Handbook of Obstetrics."* 10th edition. (pages 317-348).

ASPHYXIA NEONATORUM may be considered as deficient respiration in new born children. (page 317).

The CAUSES are injury during delivery, cutting off the foetal circulation by compression of the cord, or from protracted labor alone.

When any of these conditions are present or suspected there should be at hand for the revival of the presumably asphyxiated infant. Large pans or bowls with hot and cold water, a piece of ice, and gauze squares for insufflation, catheters for withdrawing mucus from the air passages, hot water bottles and hot or warmed blankets.

THERE ARE TWO TYPES OF ASPHYXIA.

ASPHYXIA LIVIDA. Here the baby's face and even body are blue and the umbilical vessels are engorged with blood. (page 317).

ASPHYXIA PALLIDA. Here the face and body are pale and the cord vessels are empty. (page 317).

LIVID ASPHYXIA is an early form of asphyxia and usually recovery is prompt.

Cases of PALLID ASPHYXIA are only made to breathe after heroic efforts and many of them die after a few hours or days.

TREATMENT. In many cases of asphyxia the cord should be tied and cut at once.

SLAPPING. A brisk rubbing of the spine, spanking or slapping lightly on the buttocks will often be sufficient stimulus for the breathing reflex.

MUCUS. The air passages should be cleared of mucus. Hold the child upside down and gently press downward over the trachea and throat. If mucus is in the lower passages it may be removed by inserting a catheter and suction made with a syringe.

HOT BATH. The child should be placed very soon in a warm bath in order that body heat will not be dissipated. It may be alternately submerged in a cold bath or cold water poured on the chest.

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BYRD'S METHOD OF RESUCITATION. The BYRD method of resucitation consists in the doubling of the thighs on the body and over extension of the thighs on the body as the second step. The first movement forces the lungs to collapse and the second step promotes inspiration.

INSUFFLATION. Mouth-to-mouth insufflation consists in placing squares of gauze over the child's mouth and forcing air into the lungs. This is repeated at intervals of twenty seconds or oftener.

HEMORRHAGE FROM THE CORD. (page 326).

PRIMARY hemorrhage from the cord is due to slipping of the ligature. The bleeding is from the end of the cord. It is controlled by the application of a fresh ligature.

SECONDARY hemorrhage from the cord occurs at the time of separation from the body. Here the bleeding comes from the stump. This may be due to a small bleeding point or may be a general oozing, a manifestation of hemophilia. In the first instance a ligature may be applied. In the general oozing the condition is treated as hemophilia.

HEMOPHILIA NEONATORUM is a condition of the new born child when there is a hemorrhagic tendency manifested by a bleeding from the cord stump, bowels, mouth, eyes, nose and other mucous surfaces. The blood shows no tendency to coagulate and the ordinary styptics are of little avail. The condition is due to a lack of the proper substances in the blood which cause coagulation. These substances are supplied in horse serum, the injection of which forms the best present day treatment of the condition. Diphtheria antitoxin may be used as a substitute for plain horse serum in an emergency, or whole blood from the mother may be injected under the skin of the infant. The usual supportive measures will be necessary. (page 326).

INJURIES during labor result from either pressure or manual or instrumental assistance to delivery. (page 329).

FRACTURES of the long bones or dislocations may occur during versions or breech extractions when the arms are above the head. The clavicle or jaw may be injured in a breech delivery. Fractures are difficult to treat. The part is usually immobilized by strapping to the body but while repair is rapid it is difficult to keep the parts in good position during repair. (page 329).

DISLOCATIONS should be reduced at once to prevent permanent deformity in the joint.

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INJURIES TO THE HEAD result usually from forceps pressure. The slight marks disappear in a few days. Forceps pressure may injure brain tissue and cause various paralyses, especially frequent is the temporary facial paralysis. The prognosis is usually good and slow recovery takes place. (page 329).

CAPUT SUCCEDANEUM is an edematous condition of the scalp from pressure of the head over the cervical ring. It is very common. The serous exudate disappears within a few days. (page 332).

CEPHAL HEMATOMA is the name given to a blood effusion under the scalp limited to a particular bone, usually the parietal. It appears after labor, and should be let alone. It takes some weeks or months to finally disappear. (page 334).

DISEASES OF THE NEW BORN. (page 334)

OPHTHALMIA NEONATORUM is an infection of the eyes by the gonococcus, and is characterized by the intense redness and the outpouring of a profuse purulent discharge. Fifty per cent. of all blindness results from this disease. (page 335).

CAUSE. It is caused by the entrance of the gonococcus from the vagina during delivery.

SYMPTOMS. The symptoms develop within a few days after birth. The eyes become intensely red, the conjunctive are markedly injected and the discharge at first watery soon becomes a thick greenish yellow. Later the swelling is so marked the eyes cannot be opened and ulcers and later opacities of the cornea may result.

TREATMENT. The prophylactic treatment of this condition consists in the Crede method of treating the eyes at birth. The lids are separated and a drop of a one per cent. solution of silver nitrate or other suitable germicide instilled in the conjunctival sac. This may be neutralized or flushed with water, boric solution or saline solution.

CURATIVE. When the disease has developed the treatment consists in the application of iced compresses to check the inflammatory process, the routine installation of silver nitrate or other suitable germicide and if but one eye is affected, scrupulous care that the other eye may not become diseased by the contact.

SIMPLE OPHTHALMIA. At times following the use of an old solution of silver nitrate or roughness in the use of the Crede method, a watery discharge may present. This may be treated by irrigations of boric solution but smears should be made in all cases of discharging eyes to rule out the gonococcus.

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ICTERUS NEONATORUM. A certain amount of jaundice is normal in new born children and is caused by destruction of blood cells and the establishment of the liver function. In some infants, however, there is often present an intense and lasting jaundice which is considered as evidence of some infectious process in the biliary tracts. It yields to purgation and time. (page 340).

WINCKEL'S DISEASE is characterized by an intense jaundice and fever, loss of weight and other signs of severe infection. It is believed to be an infection of the liver itself caused by the entrance of organisms along the cord or cord stump and the remains of the umbilical vessels. The prognosis is bad. (page 340).

SPINA BIFIDA is due to a congenital absence of the vertebral arches, allowing the membranes covering the spinal cord to bulge outward forming a tumor. Such cases may be cured by operation, but the prognosis is unfavorable. (page 341).

CLEFT PALATE is due to failure of fusion of the sides of the palate. It may be cured by operation.

HARE LIP is a result of a failure of fusion of the two sides of the lip. It is amenable to operation. It is often found in association with cleft palate.

MASTITIS is seen in infants, due to the precocious functioning of the breasts. The breasts may appear congested, enlarged, hot and tender. The treatment is a snug binder and cold applications. (page 342).

VAGINAL DISCHARGE OF BLOOD in female children may be manifestation of hemophilia or may be from injury during delivery. Otherwise it is of no consequence. (page 342).

UMBILICAL HERNIA is due to a weakening in the umbilical opening and a failure of the recti muscles to unite firmly. It is readily cured by pressure. (page 342).

UMBILICAL VEGETATIONS are small granulations left after separation of the cord. They bleed easily. Silver nitrate stick or the scissors will readily cure them.

CONSTIPATION may be the result of improper diet on the part of the mother or insufficient water intake for the child. It may be a sign of imperforate anus, or other malformation. If properly handled it will not become chronic. Enemas, oil, soapstick and suppositories may be used as indicated. (page 343).

CONGENITAL CYANOSIS "*blue baby*" is due to a congenital failure of the foramen ovale to close and the improper admixture of venous and arterial blood results. Keeping the infant on the right side will favor closure. (page 343).

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ATELECTASIS or improper expansion of the lungs leads to cyanosis from improper oxygenation. The measures used to combat asphyxia are useful here. (page 344).

TETANUS is the result of contamination of the umbilical cord stump with the bacillus of tetanus. It is rare.

SUFFOCATION is caused by malice or accident on the part of the mother. It is prevented by separate bed or crib for the infant, and should be guarded against in puerperal eclampsia and insanity. (page 345).

DIARRHEA is due to improper feeding or water. Purgation and proper feeding usually readily checks the condition. (page 345).

COLIC or indigestion causes at times acute paroxysms in the infant. Hot water bottles, carminatives and purgation will effect a cure but the proper feeding must come first as a curative agency. (page 346).

Quiz questions for this lecture will be found in *Foote's "State Board Questions and Answers for Nurses."* J. B. Lippincott Company, Philadelphia and London, 1920, pages 311, 312, 313, 314, 315, 316, 338.

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